

**DESCRIPTION OF IMMATURE STAGES OF TWO SPECIES OF
PSEUDOLAMPSIS (COLEOPTERA: CHRYSOMELIDAE) AND THE
ESTABLISHMENT OF A NEW COMBINATION IN THE GENUS**

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Abstract.—The taxonomic history of species of *Pseudolampsis* is discussed and a new combination, *Pseudolampsis darwini* is formed. *Distigmoptera darwini* which had previously been synonymized with *P. guttata* is shown to be a unique species based on characters of larval and genitalic morphology. The immature stages of *Pseudolampsis guttata* and the third instar larva and pupa of *Pseudolampsis darwini* are described and figured. These larvae are compared with other known larvae of Alticini.

Resumen.—Se discute la historia taxonómica del género *Pseudolampsis* y se forma la nueva combinación de *Pseudolampsis darwini*. Se demuestra que *Distigmoptera darwini*, previamente sinonimizada con *P. guttata* es especie única, basándose en las características de la larva y la morfología de la genitalia. Se describen y trazan las etapas inmaduras de *Pseudolampsis guttata* y el último estadio y la pupa de *Pseudolampsis darwini*. Estas larvas se comparan con otras larvas conocidas de Alticini.

One of the easiest to recognize but most poorly known groups in the Alticini are the “monoplatines”, a group of small elongate beetles with continuous pubescence covering body and elytra, with very enlarged metafemora, globosely swollen last tarsal segment and nine elytral striae (Scherer, 1962). This is a neotropical group with 37 genera, over half described by Clark (1860) and first proposed as a group, as the Monoplatites, by Chapuis (1875). The monoplatines are not collected in large numbers and are poorly understood both taxonomically and biologically (Flowers and Tiffer, 1992). Despite the phenetic similarity of the monoplatine genera, the tribe Monoplatini (Leng, 1920) has not been universally accepted (Furth, 1988; Seeno and Wilcox, 1982) nor have any hypotheses of relatedness among the genera been proposed. Only one species of monoplatine larva has been described previously (Buckingham and Buckingham, 1981) and few species have corroborated records of host plant (Jolivet and Hawkeswood, 1995; Flowers and Janzen, 1997) or breeding habits (Flowers and Tiffer, 1992).

The larvae of Alticini are in general poorly known, especially given the large size of the tribe (but see Lawson, 1991, for review). This may be due to life history of larvae, some larvae are nocturnal (Duckett, unpublished data), others are root or stem feeders (Lawson, 1991). However difficult larval data can be to obtain, larval morphology can be significant to the identification of closely related taxa as well as the resolution of higher level taxonomic relationships (Lawrence and Newton, 1995; Reid, 1995). Here we present a detailed study of larval morphology of *Pseudolampsis*, a monoplatine feeding on the waterfern, *Azolla*, to make these data available to

coleopterists working at higher taxonomic levels, as well as to aide general understanding of larval Chrysomelidae and of the monoplattines. We also present the taxonomic history of genus *Pseudolampsis* and discuss the adult characters which support the formulation of a new taxonomic combination in the genus.

TAXONOMIC HISTORY

Pseudolampsis was first described in 1889 by Horn, who transferred *Hypolampsis guttata* Leconte 1884 to *Pseudolampsis*. This genus was thought to be known only from the southern U.S. until Balsbaugh (1969) synonymized *Distigmoptera darwini*, known only from Uruguay and Mato Grosso, Brazil with *P. guttata*. Immatures of *P. guttata* from the U.S. were initially described by Buckingham and Buckingham (1981).

Immatures of *Pseudolampsis* were collected in São Paulo State, Brazil, and as the original larval description (Buckingham and Buckingham, 1981) lacked detailed chaetotaxy and description of mouthparts, redescription was warranted. During the course of preparing the larval description (and study of the adult) it became apparent that the specimens collected in São Paulo (Fig. 1) represent a distinct species from those collected in Florida, USA. Specimens collected in Florida represent *Pseudolampsis guttata* (LeConte), a species known to feed on Azolla (Buckingham and Buckingham, 1981; Habeck, 1979). Specimens collected in São Paulo State proved to be conspecific with *Distigmoptera darwini* Scherer, 1964. *Distigmoptera darwini* is congeneric with *Pseudolampsis*, but the differences existing in the male and female genitalia as well as the larva support its individual identity.

Balsbaugh figured the median lobe of the aedeagus of *Distigmoptera darwini*, collected in Mato Grosso, Brazil. This material obviously shows a groove in the ventral surface of the aedeagus, not present in *P. guttata* (cf. figs. 4 and 5 in Balsbaugh, 1969). This groove is present in a paratype of *Distigmoptera darwini* (which proved to be male on dissection despite Scherer's assertion that all specimens were female (Scherer, 1964:298)), as well as in the São Paulo material.

Dissection of the female genital system reveals a very similar system to that of *Microdonacia* (Reid, 1992: fig. 44). The bursa copulatrix is elongate, as are the vaginal palpi; the palpi are also presented in a unified pair apically (Figs. 2C–E), however, the basal area (or internal apodeme of Reid, 1992) is fused in *Pseudolampsis* and dorsally recurved. The eighth sternite (Fig. 2B) (spiculum gastrale, or tignum of Konstantinov (1994)) has an elongate basal portion, widens to a truncate setose apex; the epiproct and pygidium are also apically setose.

In *Pseudolampsis* the spermathecae of both species are practically identical (see Fig. 2A); both possessing a flange on the pump, an enlarged proximal spermathecal duct, and a greatly enlarged gland valve. The vaginal palpi, however, are significantly different (Figs. 2C–E); in *P. guttata* (Fig. 2D, E) the internal apodeme is basally wider than the apex and in *P. darwini* it is narrower (Fig. 2C). Both possess 7 setae per palp. The bursa copulatrix in *P. darwini* is vested with microtrichea over its entire surface. In *P. guttata* only the opening of the bursa has microtrichea, which are significantly longer than those in *P. darwini*. The eighth sternite also differs between species in setation, which is much sparser in *P. darwini*.

Differences in the larvae will be described and discussed below. These and the

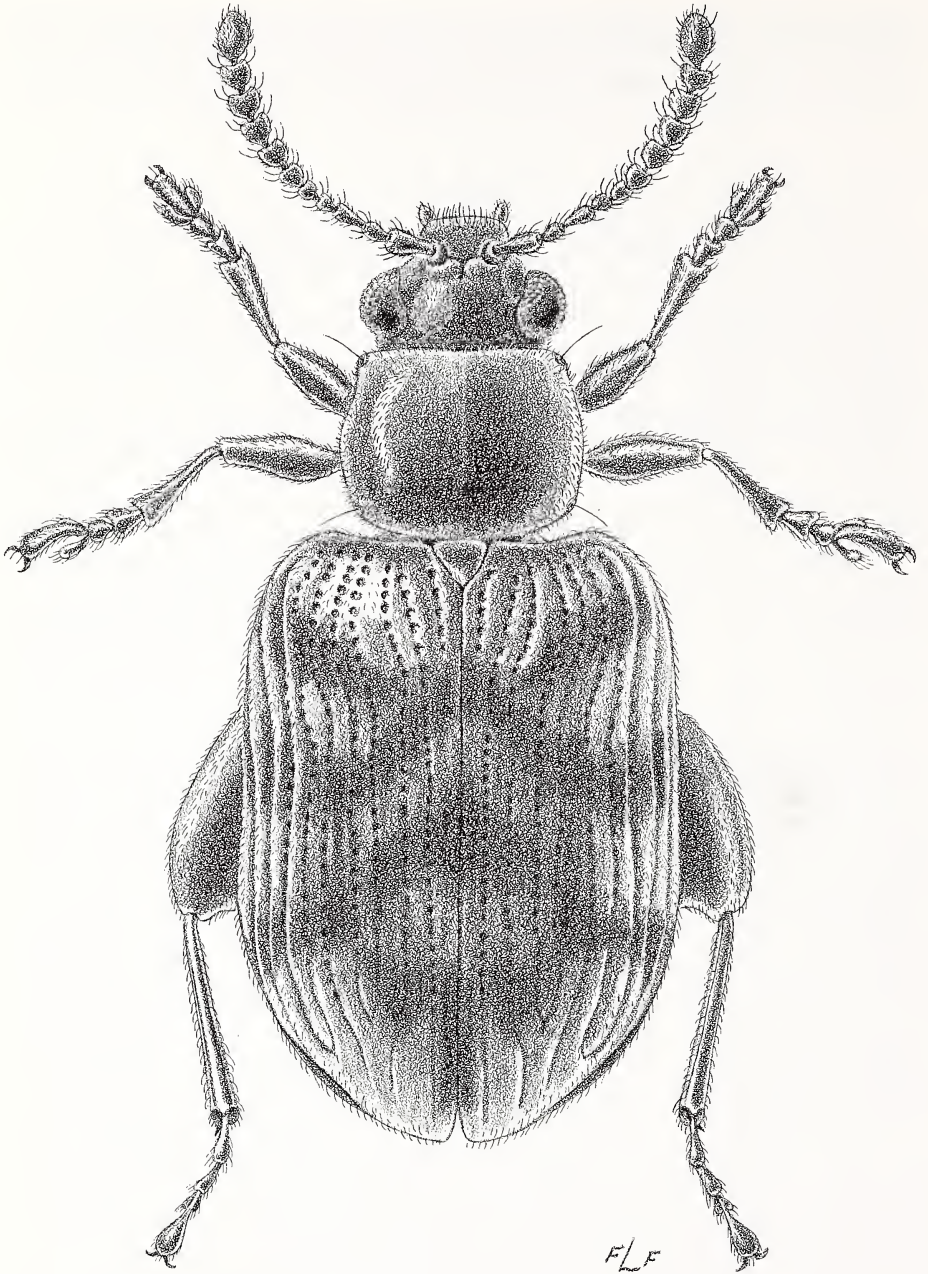


Fig. 1. *Pseudolampsis darwini* (Scherer), dorsal habitus, length 2.2 mm.

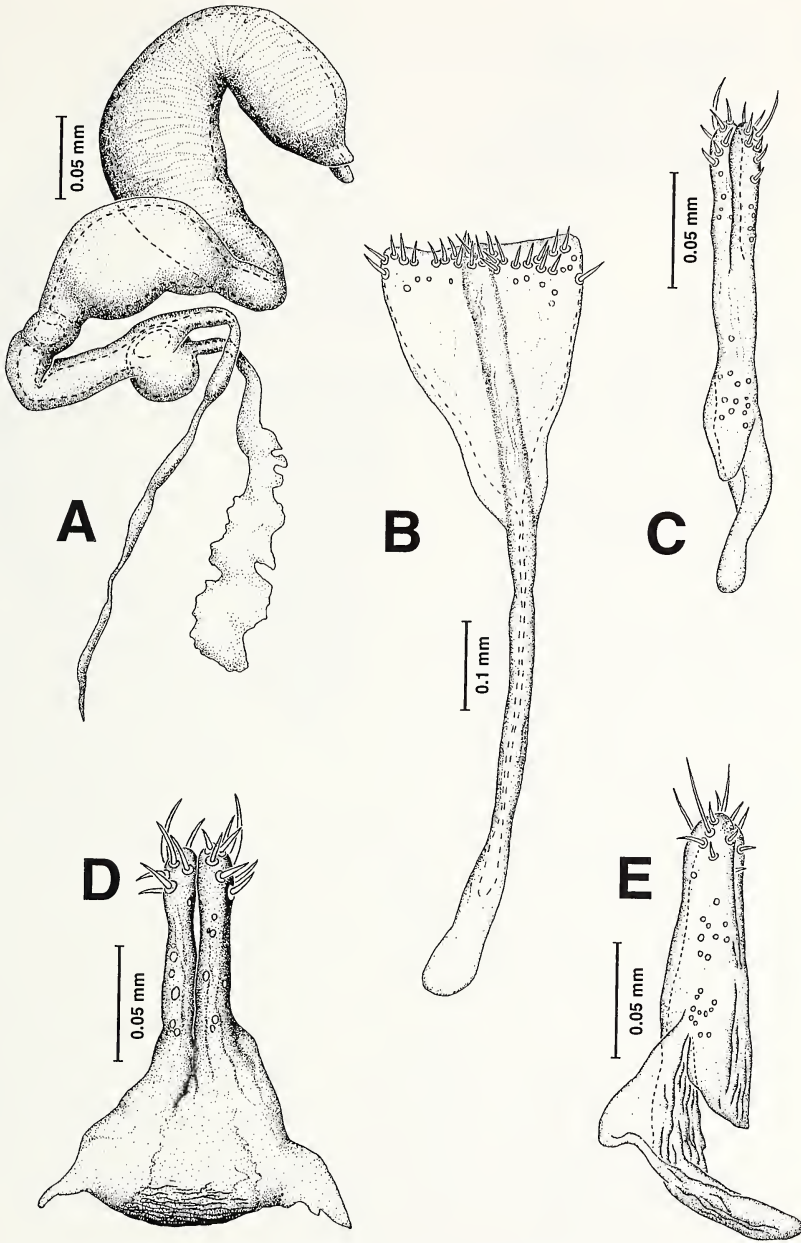


Fig. 2. *Pseudolampsis* Female genitalia. A, spermatheca; B, eighth sternite ventral view, *P. guttata*; C, vaginal palpi *P. darwini* (dorsal view); D–E, vaginal palpi *P. guttata* (dorsal, lateral).

mentioned characteristics of the genitalia warrant the establishment of a new combination. The formal synonymy is as follows:

Pseudolampsis darwini n. comb.

Distigmoptera darwini Scherer, 1964

Pseudolampsis guttata Balsbaugh, 1969

Pseudolampsis darwini (Scherer, 1964)

Figs. 3A-H, 4A-J

Larva (Figs. 3A,B)

Length: 2-5 mm.

General integument whitish; head brown with mandible yellowish-brown; antennae, maxillae and labium partially membranous; thorax and abdominal segments 1-8 densely asperate, with sclerites bearing prominent setae and small pigmented spots; segments separated by grooves; spiracles annular located in darker sclerites.

Head rounded (Fig. 3C, D) moderately pigmented and sclerotized; frontal arms V-shaped; epicranial stem short; endocarina extending anteriorly to epicranial stem, not reaching anterior margin. Frons bearing 3 pairs of hairy setae and 1 pair short scamiform setae; each epicranial half bearing 10 setae (7 dorsal, 3 ventrolateral). One convex, pigmented stemma each side. Antenna 2-segmented (Fig. 4E); membranous socket band-like, located at the end of frontal arms; basal segment partially membranous, bearing 2 dorsal sensoria on membranous area; distal segment cupuliform, sclerotized basally. Clypeus (Fig. 4A) transverse, narrow, sclerotized at basal half, bearing 2 setae on each side. Labrum (Fig. 4A) transverse, subtrapezoidal, slightly emarginate anteriorly, bearing 2 pairs of setae (lateral longer) and 1 pair of sensory pores. Epipharynx (Fig. 4B) densely covered by microtrichiae, concentrated in median anterior region; anterior margin bearing 6 pairs of stout pedunculate setae, 2 groups of campaniform sensillae near anterior margin and 2 groups at base on membranous area; 2 elongate darker areas near middle, each bearing a minute seta at apex. Mandibles (Figs. 4F, G) symmetrical, palmate, 5-toothed, dentae 2 and 3 serrate; external face bearing 2 setae and 2 sensory pores; penicillus formed by ramified setae. Maxilla (Figs. 4C, D): stipes elongate with 2 sclerotized areas, one small transverse, near palp bearing 3 setae (1 short) and other basal larger, bearing laterally 2 ventral and 1 dorsolateral setae; cardo elongate, glabrous; mala bearing 6 moderately long pedunculate setae ventrally and 8 stout pedunculate dorsally (4 basal serrate and bunched); mala bearing microtrichiae dorsally; maxillary palp 3-segmented, 2 basal segments sclerotized at base; basal segment band-like bearing 1 ventral sensory pore; 2nd segment bearing 2 ventral and 1 dorsal setae; distal segment bearing ventrally 1 lateral sensory pore and dorsally 1 short seta and 1 sensillum placodeum. Labium (Figs. 4C, D): prementum membranous with a transverse sclerotized area bearing 2 setae; postmentum membranous bearing 1 well developed and 1 short seta and 1 sensory pore on each side and 2 minute setae near base; labial palp 2-segmented; basal segment with a ventrolateral sensory pore; distal segment with 1 ventrolateral sensory pore and 1 seta and 1 placoid sensillum dorsal. Hypopharynx (Fig. 4D) membranous, partially covered by microtrichiae; anteriorly bearing 6 setae (4 minute and 2 short); 2 longitudinal sclerites. Gular area absent. Prothorax narrower than other thoracic segments; pronotum with sclerotized setose shield-like plate, divided at mid-line by whitish narrow band; each

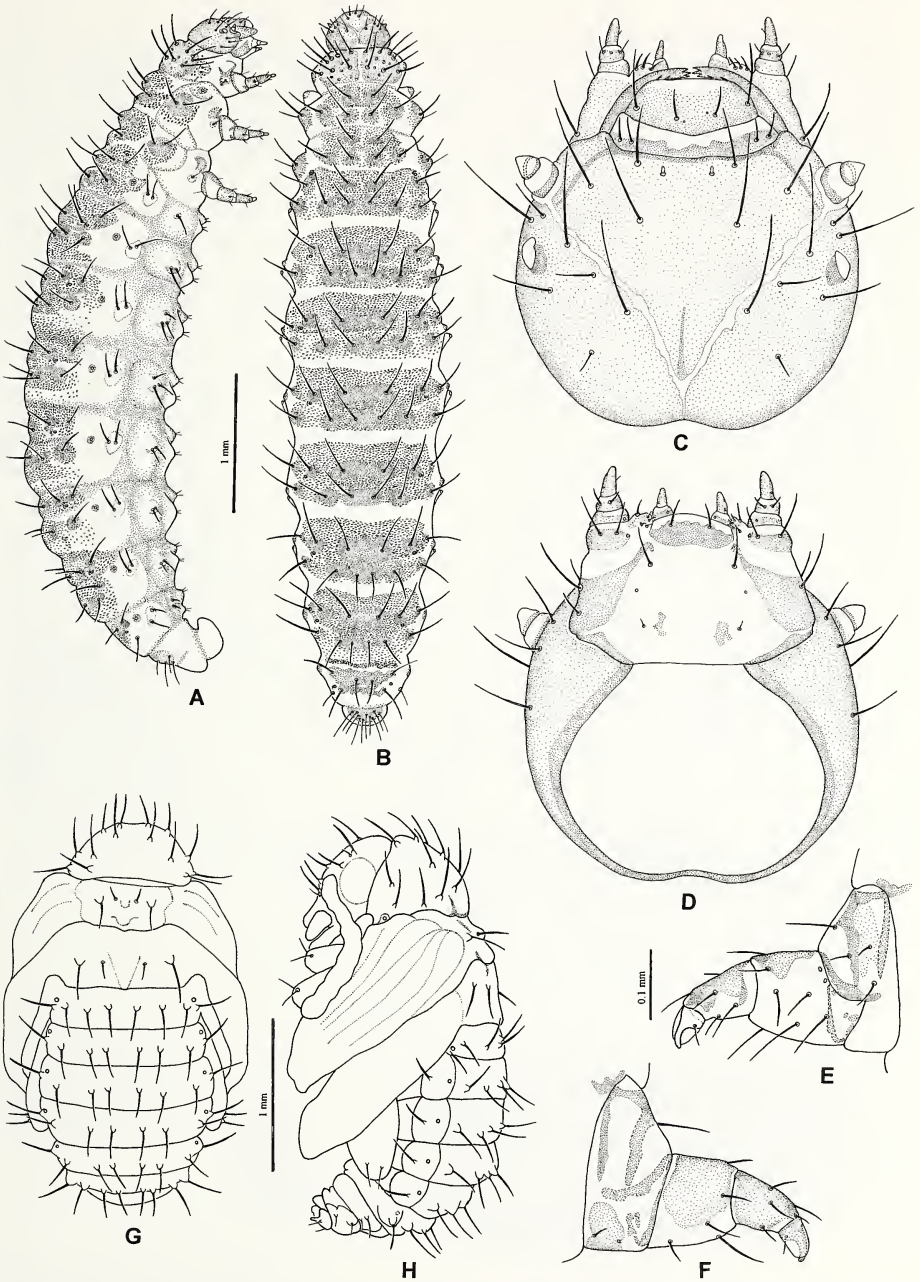


Fig. 3. *Pseudolampsis darwini* (Scherer). Larva: A, B, habitus (lateral, dorsal); C, D, head (dorsal, ventral); E, F, prothoracic leg (laterointernal, laterosternal). Pupa: G, H, dorsal, lateral. Figs. A, B; C–F; G, H, respectively to same scale.

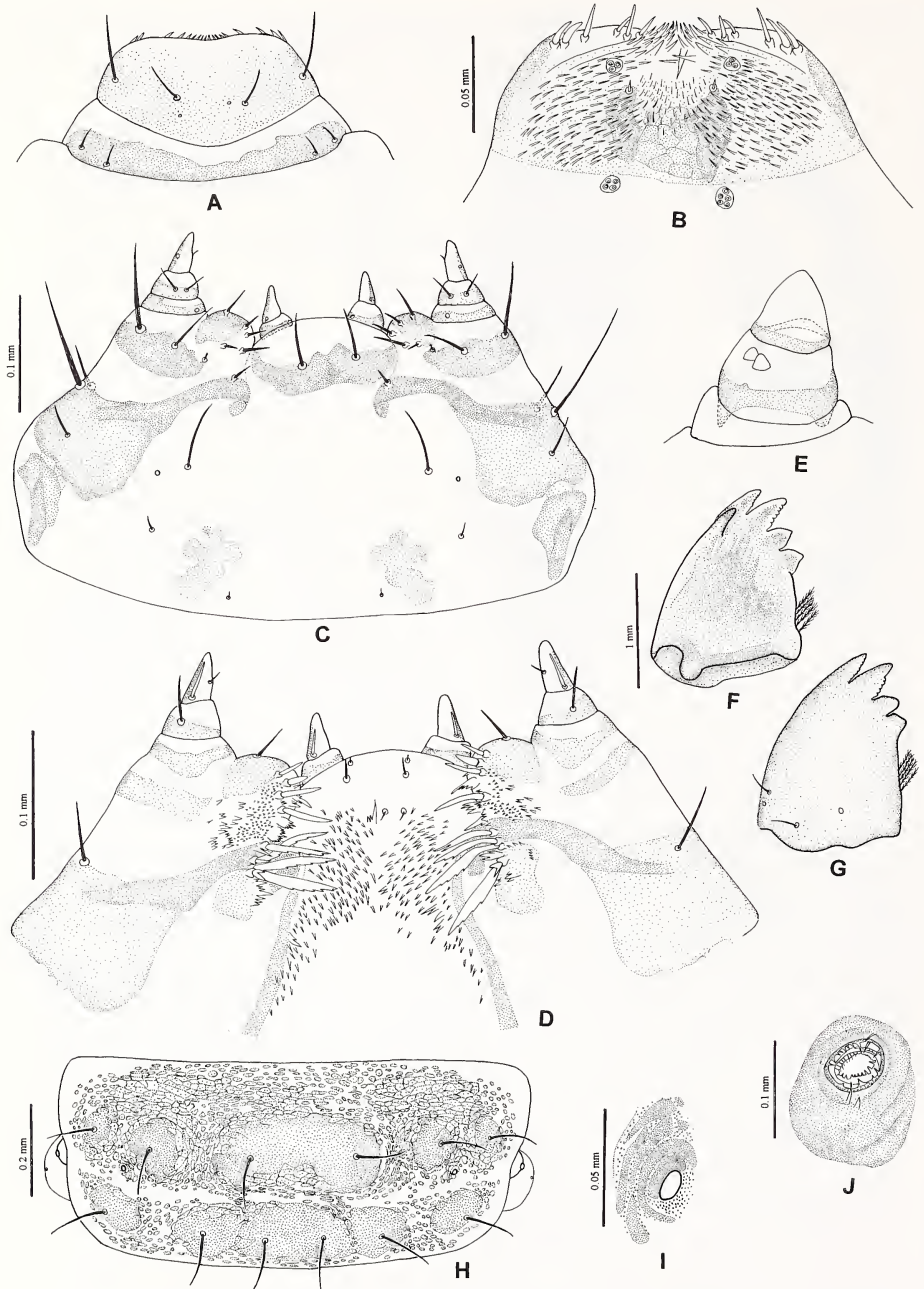


Fig. 4. *Pseudolampsis darwini* (Scherer). Larva: A, clypeus and labrum; B, epipharynx; C, D, maxillae and labium (ventral, dorsal); E, antenna (dorsal); F, G, mandible (internal, external); H, 6th tergite; I, 5th glandular opening; J, mesothoracic spiracle. Figs. A, C; E, I; F, G, respectively to same scale.

side bearing 7 setae and minute darker spots scattered among them. Meso- and metathorax gradually wider than prothorax; both with a transverse median groove forming 2 plicae and identical arrangement of sclerites: 2 rounded sclerites on 1st plica, each bearing one seta, and 4 smaller sclerites on 2nd plica, each bearing 1 seta; each side with one dorsolateral sclerite bearing 2 setae; small sclerotized pigmented spots densely scattered among larger sclerites making irregular plates; intersegmental area between pro- and mesothorax with a lateral membranous prominence bearing an annular spiracle (Fig. 4J). Thoracic segments with 1 sclerite and 1 small lobe bearing 1 seta, lateral to each coxa. Legs (Figs. 3E–F) increasing in size from pro- to metathorax, 4-segmented setose and partially membranous; basal segment bearing 5 setae; 2nd segment bearing 10 setae; 3rd segment bearing 7 setae; tarsungulus bearing 1 seta and pulvillus.

Abdominal segments 1–7 divided dorsally by a transverse groove forming 2 plicae; segment 1 with 2 series of sclerites arranged into transverse rows: one with 4 and other with 6 rounded sclerites each bearing 1 seta; segments 2–5 with 2 rows of sclerites, each with a median larger sclerite bearing 2 setae (larger on first row) and 2 smaller on each side, each bearing 1 seta; segments 6–7 (Fig. 4H) with 1st plica similar to the preceding one and larger median sclerite of 2nd plica fused to one lateral on each side and bearing 4 setae; segment 8 with an irregular sclerite bearing 6 dorsal setae; segment 9 almost totally sclerotized dorsally, bearing 10 setae. Segments 1–8 with paired dorsolateral glandular opening (Fig. 4I): first opening located anterior to the sclerite on first plica; 2–7 located posterior to rounded lateral sclerite on first plica, near groove; 8 near apex. Segments 1–8 with lateral paired annular spiracles located in sclerotized rounded lobe and paired lateral partially sclerotized lobes each bearing 2 setae. Ventrally, segments 1–8 with 3 membranous lobes at middle (disposed in a triangle) each bearing 2 setae and 1 slightly sclerotized lobe, each bearing 3 setae.

Pupa (Figs. 3G–H)

Length: 2.5–2.8 mm

Cream, bearing long brownish setae inserted in small tubercles. Head invisible from above, bearing 6 pairs of setae (2 pairs shorter). Prothorax bearing 7 pairs of dorsal setae and 1 pair of lateroposterior round spiracles; meso- and metanotum bearing 2 pairs of setae each; each femur bearing 1 pair of setae near apex. Abdominal segments 1–6 bearing 4 pairs of dorsal setae; segments 1–5 bearing a pair of laterodorsal round spiracles; segment 6 with a pair of vestigial rounded spiracles; segments 7–8 apparently bearing 2 pairs of short lateral setae; segment 9 with 2 distal projections, each bearing 2 short setae near base.

Material examined. BRAZIL. *São Paulo*: Guapiara, Fazenda Intervales (Sede de Pesquisa) (marsh), 09.xi.1992. (MZSP), 36 larvae, 7 pupae inside pupal cocoons and 4 adult fixed (MZSP). Larvae were prepared in glycerine.

Pseudolampsis guttata (LeConte, 1884)

Figs. 5A–G, 6A–N

First instar larva (Fig. 5A)

Length: 1.0–1.5 mm

General integument (including head) dorsally brownish, almost totally sclerotized, covered by setose sclerites very closely placed or fused; ventrally, membranous, whitish.

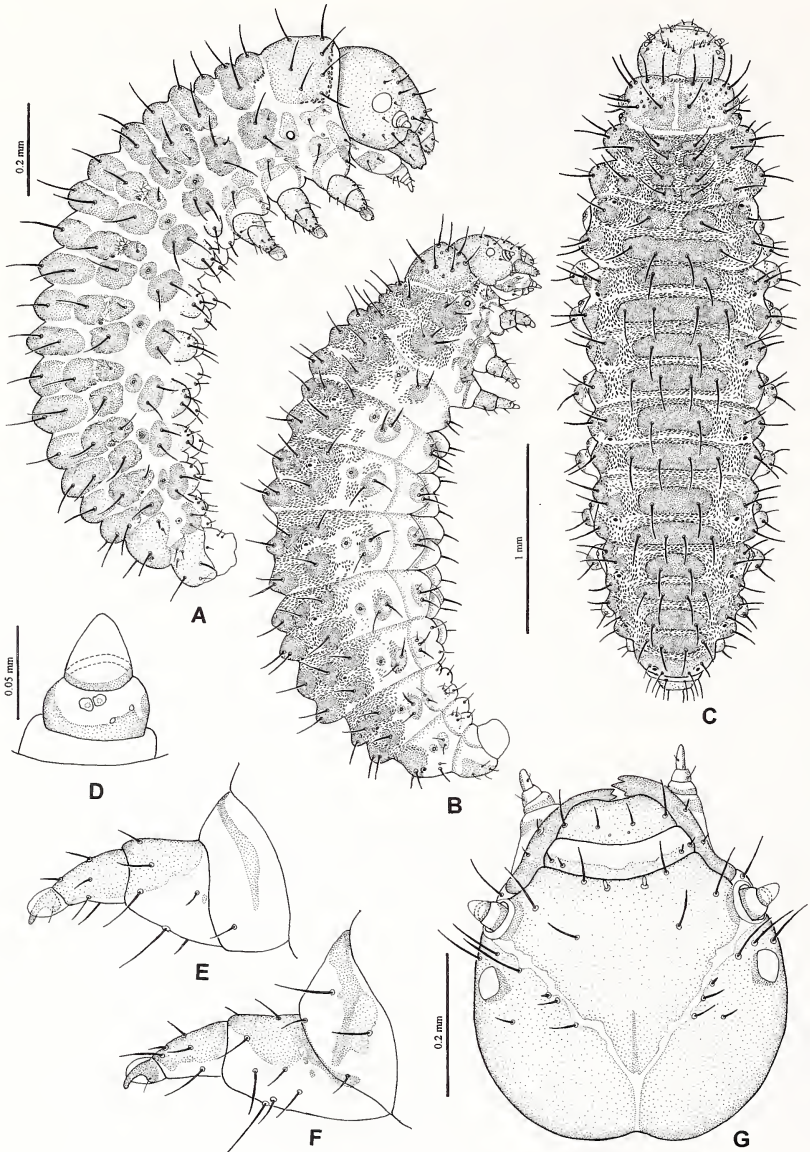


Fig. 5. *Pseudolampsis guttata* (LeConte), Larva: A, first instar (lateral); B, C, mature (lateral, dorsal); D, antenna; E, F, prothoracic leg (laterosternal, laterointernal); G, head (dorsal). Figs. B, C; E-F, respectively to same scale.

Head and mouth parts similar to mature larva. Stemmata large and translucent. Prothorax: pronotum with shield-like plate divided at middle by whitish narrow band, each side bearing 7 setae; each side with 1 lobe slightly sclerotized bearing 2 setae and 2 small sclerites each bearing 1 seta near coxa. Meso- and metathorax with a transverse median groove forming 2 plicae and an identical arrangement of sclerites: each plica with 1 dorsal transverse sclerotized plate; plate of first plica shorter, partially divided by reticulate area bearing 2 setae, the second, entire bearing 4 setae; each side with a rounded plate bearing 3 setae; 2 sclerites lateral to each coxa, the posterior bearing 1 seta; intersegmental area between pro- and mesothorax with a lateral sclerite bearing an annular spiracle. Legs similar to mature larva.

Abdominal segments 1–7 divided dorsally by a transverse groove forming 2 plicae with an identical arrangement of sclerites: first plica with a median sclerite bearing 2 setae and 2 smaller sclerites on each side, each bearing 1 seta; 2nd plica with a larger median sclerite bearing 4 setae and 1 smaller seta on each side, each bearing 1 seta; these sclerites are very near each other, separated only by a small groove; segments 8–9 with a larger dorsal sclerite bearing respectively 2 and 6 setae. Segments 1–8 with a paired dorsolateral glandular opening at same position as mature larva; each with lateral paired annular spiracles located in sclerotized rounded lobe; each segment with a lateral sclerotized lobe bearing 2 setae; ventrally with 3 membranous lobes at middle (arranged in a triangle) each bearing 2 setae and 1 larger sclerite each side, bearing 3 setae.

Mature larva (Figs. 5B, C)

Length 2.5–4.0 mm

General integument whitish; head brown with mandibles clearer; antennae, maxilla and labium partially membranous; thorax and abdominal segments 1–8 densely asperate, with sclerites, bearing long setae and small pigmented spots giving dorsal integument a brown appearance; spiracles annular, located in darker sclerites.

Head rounded (Fig. 5G), pigmented and sclerotized; frontal arms V-shaped; epicranial stem short; endocarina extending anteriorly of epicranial stem, not reaching anterior margin; frons bearing 3 pairs of hairy setae and 1 pair of shorter and scamiform setae medioanteriorly; each epicranial half bearing 10 setae (1 pair very short). One convex pigmented stemma on each side. Antenna 2-segmented (Fig. 5D); membranous socket band-like located at the end of frontal arms; basal segment partially membranous bearing 2 dorsal sensoria on membranous area and 2 sensory pores at border of sclerotized area; distal segment cupuliform, sclerotized basally. Clypeus (Fig. 6C) transverse, narrow, slightly sclerotized on basal half, bearing 2 short setae on each side. Labrum (Fig. 6C) transverse, slightly sclerotized, emarginate anteriorly bearing 2 pairs of setae (lateral longer) and 1 pair of sensory pores. Epipharynx (Fig. 6D) apparently partially covered by microtrichiae, more concentrated and longer at median anterior region; anterior margin bearing 7 pairs of stout pedunculate setae (2 pairs near middle shorter; 1 pair bifurcate), 2 groups of sensillae near anterior margin, 2 groups near base and 2 larger sensillae near middle. Mandibles (Figs. 6G, H) symmetrical, palmate, 5-toothed; external face bearing 2 setae and 2 sensory pores; penicillus well developed, formed by ramified setae. Maxilla (Figs. 6A, B): stipes elongate with 2 sclerotized areas, one small, transverse, near palp bearing 3 setae, other area basal, longer, bearing 2 ventral and 1 dorsolateral setae; cardo elongate, glabrous; mala ventrally bearing 8 pedunculate setae, and dorsally partially

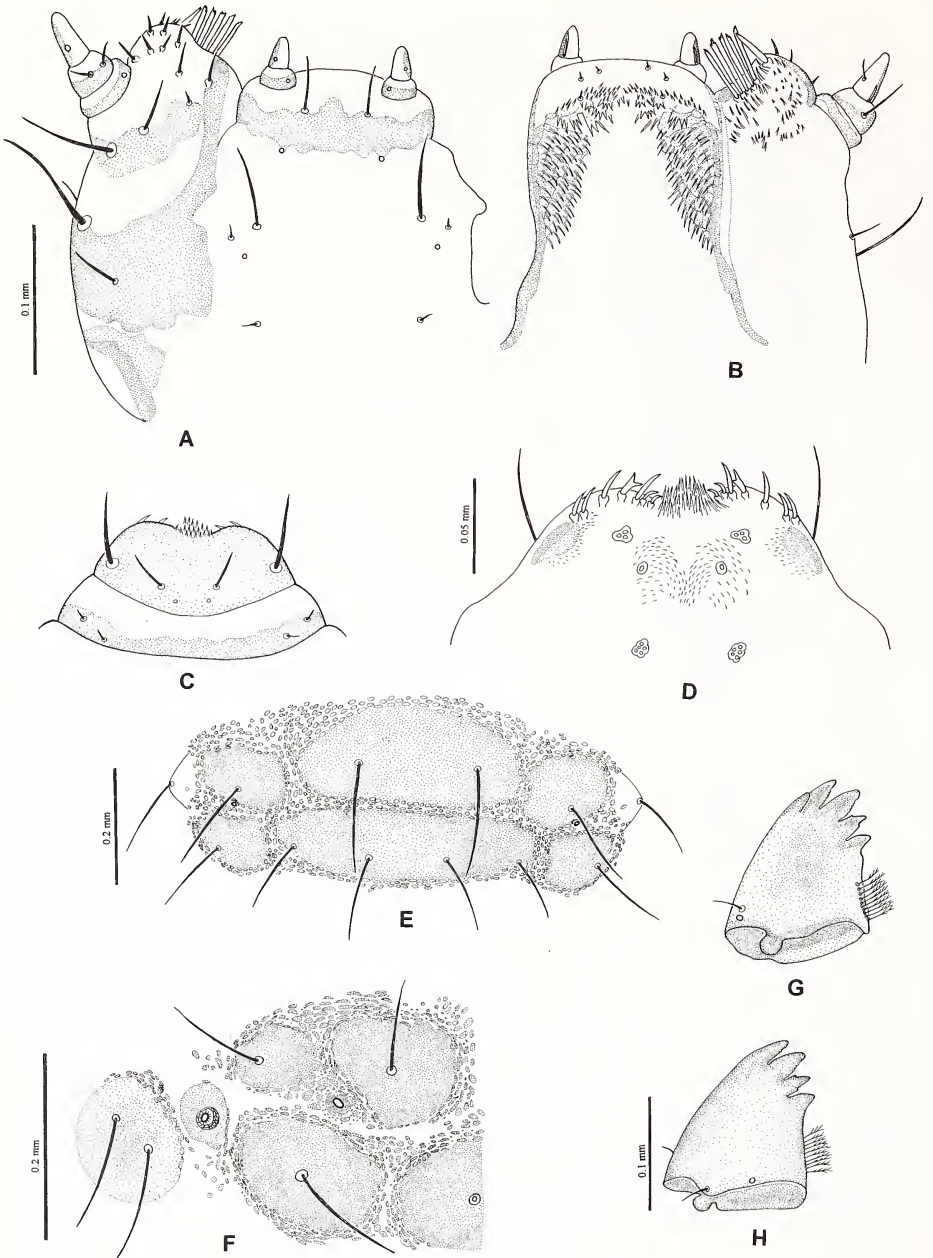


Fig. 6. *Pseudolampsis guttata* (LeConte), Larva: A, B, maxilla and labium (ventral, dorsal); C, clypeus and labrum; D, epipharynx; E, 6th tergite; F, abdominal segment 2 (lateral) showing the glandular opening and spiracle; G, H, mandible (internal, external). Figs. A, B; C, G, H, respectively to same scale.

covered by microtrichiae, and bearing 6 stout pedunculate setae with serrate apex; maxillary palp 3-segmented; 2 basal segments sclerotized at base; basal segment band-like, bearing 1 ventral sensory pore; 2nd segment bearing 2 ventral and 1 dorsal setae; distal segment bearing ventrally 1 lateral sensory pore and dorsally 1 seta and 1 sensillum placodeum. Labium (Figs. 6A, B): prementum with a transverse sclerotized area bearing 2 setae on anterior border and 2 sensory pores on posterior; postmentum membranous, each side bearing 1 long and 1 minute seta and 1 sensory pore, 2 minute setae near base; labial palp 2-segmented; basal segment with a ventrolateral sensory pore; distal segment with a ventrolateral sensory pore and a dorsolateral placodeum sensillum. Hypopharynx (Fig. 6B) membranous, partially covered by microtrichiae, bearing 6 minute setae; 2 longitudinal sclerites. Gular area absent.

Prothorax narrower than other thoracic segments; pronotum with sclerotized setaceous shield-like plate, divided at mid-line by whitish narrow irregular band, each side bearing 7 setae with minute darker spots scattered among them; one ventral lobe slightly sclerotized bearing 2 setae near coxa. Meso- and metathorax gradually wider than prothorax, both with a transverse median groove forming 2 plicae and an identical arrangement of sclerites: on first plica 2 small rounded sclerites, each bearing 1 long setae. On 2nd plica 2 sclerites of same size at middle, and 1 larger each side, each bearing one seta; each side with a large sclerotized tubercle each bearing three setae (1 shorter); small sclerotized pigmented spots densely scattered among larger sclerites; intersegmental area between pro- and mesothorax with a slightly sclerotized lobe bearing an annular spiracle. Each thoracic segment lateral to coxae with 1 sclerite and 1 lobe, each bearing 1 seta. Legs (Figs. 5 E, F) increasing in size from pro- to metathorax; 4-segmented, setaceous and partially membranous; basal segment bearing 5 setae; 2nd segment bearing 11 setae; 3rd segment bearing 6 setae; tarsungulus bearing 1 setae and pulvillus.

Abdominal segments 1-7 divided dorsally by a transverse groove forming two plicae; segment 1 with 4 sclerites on 1st plica, each bearing 1 seta, 2nd plica with 1 median larger sclerite bearing 4 setae and 1 smaller sclerite on each side, each bearing 1 seta; segments 2-7 (Fig. 6E) with 1 median larger sclerite bearing 2 setae and 2 smaller sclerite each side, each bearing 1 seta, and 2nd plica with 1 median larger sclerite bearing 4 setae and 1 lateral smaller sclerite each side, each bearing 1 setae, segment 8 with 1 dorsal irregular sclerite bearing 6 setae and 2 short setae, each side, on membranous area; segment 9 slightly sclerotized dorsally almost totally, bearing 10 setae; segment 10 membranous and ventral. Segments 1-8 with a paired dorsolateral glandular opening (Fig. 6F): first opening anteriorly to lateral sclerite of first plica; 2-7 between the 2 lateral sclerites on first plica near groove; 8 near apex. Segments 1-8 with lateral paired annular spiracles located in a rounded sclerite, and with paired lateral lobes (behind spiracle) each with sclerotized apex, each bearing 2 setae. Ventrally, segments 1-8 with 3 median small lobes disposed in a triangle, each bearing 2 setae and 1 larger lobe each side, each bearing 3 setae.

Pupa

Similar to *P. darwini*, differing only by presence of 5 pairs of setae on the head (6 in *P. darwini*).

Material examined. USA. Florida. Alachu + Citrus Cos.; Gainesville and Crystal River, X. 1979, M. & G. Buckingham cols., 21 first instar and 35 mature larvae, 11

pupae fixed (MZSP) and 7 adults (2 MZSP and 5 collection C.N. Duckett). Larvae were prepared in glycerine for dissection.

BIOLOGICAL NOTES

Larvae and adults of *Pseudolampsis darwini* were collected on the *Azolla* sp. (Azollaceae) that was covering the pond surface. The pupae were found inside cocoons attached under or among the *Azolla* stems. The material of *P. guttata* was collected on *Azolla caroliniana*. Alticini larvae live on leaves or stems, on roots or underground parts of plants (Lawson, 1991).

REMARKS

Comparing the first instar with mature larva of *Pseudolampsis guttata* we verified that in the first instar the dorsal sclerites are larger or fused covering the dorsal integument almost entirely and the stemmata are larger and translucent, while in the mature larva the sclerites are smaller surrounded by small pigmented spots and the stemmata are pigmented. Other similarities are morphology of mouthparts, pronotum bearing 14 setae, abdominal segments 1-8 with a paired glandular opening and paired annular spiracles located in sclerotized lobes.

Comparing the mature larva of *Pseudolampsis darwini* with *P. guttata*, they present different arrangement of sclerites of the abdominal segments (Figs. 3B, 4H; 5C, 6E, F) and different number of setae on anterior margin of epipharynx (Figs. 4B; 6D), mala (Figs. 4C, D; 6A, B), and legs (Figs. 3E, F; 5E, F). Both species present similar frontal arms (Figs. 3C; 5G), and equal number of setae on pronotum (Figs. 3B; 5C), frons and epicranium (Figs. 3C; 5G), clypeus and labrum (Figs. 4A; 6C), prementum (Figs. 4C, 6A) and hypopharynx (Figs. 4D; 6B), and antennae 2-segmented (Figs. 4E; 5D), 1 pigmented stemma on each side (Figs. 3C; 5G), mandibles 5-toothed with penicillum ramified (Figs. 4F, G; 6G, H), maxillary palpi 3- and labial palpi 2-segmented (Figs. 4C, D; 6A, B), and legs 4-segmented (Figs. 3E, F; 5E, F).

The comparison of the larvae of *Pseudolampsis* spp. with other described Alticini is difficult because some characters are not clear in the description or/and illustrations. A good comparison with *Chaetocnema denticulata* (Illiger) and *C. pulicaria* Melsheimer was possible based on the detailed description of Anderson (1938). Comparing the larvae of these two genera, only *Pseudolampsis* present abdominal segments divided transversally into 2 parts (Figs. 3B, 5C), glandular openings laterally on segments 1-8 (Figs. 3A, 5B), endocarina short (Figs. 3C, 5G), and cardo glabrous (Figs. 4C, 6A).

Other than *Pseudolampsis*, no larvae are known in the monoplatine genera. Some workers place monoplattines as close to the oedionychine flea beetles possibly based on the swollen hind tarsi and femora both shared (Seeno and Wilcox, 1982). However, Bechyné and Bechyné (1975) separate the oedionychine and disonychine groups from the rest of the Alticini ("Alticidae") based on apomorphies of the median lobe of the aedeagus. Known larva of oedionychine genera *Kushelina* (Lawson, 1991), *Alagoasa* (Samuleson 1985, Duckett unpublished) and *Asphaera* (Duckett, unpublished) all lack stemmata and show considerably less sclerotization of the body than larvae of *Pseudolampsis*.

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